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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,394	01/21/2004	Tomonori Nishino	HITA.0497	1303

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EXAMINER	
DUONG, THOI V	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,394	NISHINO ET AL.	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* ~~is~~/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* ~~is~~/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0104*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Fig. 1 does not show a plurality of drain lines DL arranged in parallel in the X direction according to the specification in page 10, lines 11-19. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "a plurality of drain lines which ... are arranged in parallel in the first direction." This limitation does not conform with Fig. 1 where the plurality of drain lines DL only extend in the second direction (or Y direction); Fig. 1 does not show the drain lines DL arranged in parallel in the first direction (or X direction). In the following rejection, the Examiner will interpret this limitation as "a plurality of drain lines which ... are arranged in parallel in the second direction."

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (Kubo, USPN 6,330,047 B1) in view of Aruga (USPN 6,657,696 B2).

As shown in Figs. 2 and 4, Kubo discloses a liquid crystal display device comprising a first substrate 11 and a second substrate 9 which are arranged to face each other with a liquid crystal layer therebetween (col. 14, lines 36-38), wherein the first substrate 11 includes a plurality of gate lines 2 which extend in parallel in a first direction, a plurality of drain lines 3 which extend in parallel in a second direction which crosses the first direction, and holding capacitance lines 8 which are arranged in parallel to the gate lines 2, wherein

a pixel 1 and a switching element 4 are provided to a region which is surrounded by two neighboring gate lines 2 out of the plurality of gate lines and two neighboring drain lines 3 out of the plurality drain lines (Fig. 4),

the pixel 1 includes light transmitting region 20 which allows light incident from a back surface of the first substrate 11 to pass therethrough and a light reflecting region 22 which allows light incident from the second substrate side 9 to be reflected thereon (col. 14, lines 48-57),

the light transmitting region 20 includes a first pixel electrode 21 having the light transmitting property and the light reflecting region 22 includes a second pixel electrode 23 having the light reflecting property (col. 14, lines 14-35),

an insulation film 7 and a holding capacitance electrode (part of the holding capacitance line 8) which is connected to the holding capacitance line 8 are provided below the second pixel electrode 23 (Fig. 4), and

the holding capacitance electrode is formed in an overlapped manner to a boundary portion between the light transmitting region 20 and the light reflecting region 22 (Fig. 4).

Kubo discloses a liquid crystal display device that is basically the same as that recited in claim 1 except for the arrangement of the gate lines and the drain lines outside the display region.

As shown in Figs. 1 and 4, Aruga discloses a substrate 12 including a plurality of gate lines 111 which extend in a first direction X and are arranged in parallel in a second direction Y which crosses the first direction X and a plurality of drain lines 124 which extend in the second direction Y and are arranged in parallel in the second direction.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Kubo with the teaching of Aruga by forming on a substrate a plurality of gate lines which extend in a first direction and are arranged in parallel in a second direction which crosses the first direction and a plurality of drain lines which extend in the second direction and are

arranged in parallel in the second direction so as to obtain a picture frame area shape that is symmetrical with respect to a specific axis and simplify manufacturing process (col. 3, lines 38-43 and col. 11, lines 26-34).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (Kubo, USPN 6,330,047 B1) in view of Aruga (USPN 6,657,696 B2) as applied to claim 1 above and further in view of Sasano et al. (Sasano, USPN 5,671,027).

The liquid crystal display device of Kubo as modified in view of Aruga above includes all that is recited in claim 2 except for a holding capacitance formed by way of an anodized film formed over the holding capacitance electrode.

As shown in Fig. 2B, Sasano discloses a liquid crystal display device comprising a holding capacitance Cadd formed by way of an anodized film AOF formed over a holding capacitance electrode PL1 (col. 11, lines 46-55).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the liquid crystal display device of Kubo with the teaching of Sasano by forming a holding capacitance by way of an anodized film formed over the holding capacitance electrode so as to improve an open ratio of the display (col. 6, lines 53-55).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (Kubo, USPN 6,330,047 B1).

As shown in Figs. 53 and 54, Kubo discloses a liquid crystal display device comprising a first substrate 301 and a second substrate (not shown) which are arranged to face each other with a liquid crystal layer therebetween (col. 45, lines 50-52), a

plurality of gate lines 328 which are arranged in parallel on the first substrate 301, and a plurality of drain lines 329 which are arranged to cross respective gate lines of the plurality of gate lines 328 and are arranged in parallel, wherein

regions 325 which are surrounded by the gate lines 328 and the drain lines 329 constitute pixel regions, and each pixel region includes a switching element 318 which is operated in response to a scanning signal applied from the gate line and a pixel electrode (302, 304, 305) to which a video signal is supplied from the drain line through the switching element,

the pixel electrode constituted of first pixel electrode 302 formed of a light transmitting conductive layer which is disposed in one light transmitting region 326 defined in the pixel region and a second pixel electrode 304, 305 formed of a non-light transmitting conductive film which is disposed in another light reflecting region 327 defined in the pixel region (col. 45, lines 30-50),

an insulation film 303 is formed above the first pixel electrode 302 and an opening which allows the first pixel electrode to be exposed is formed in a region of the insulation film corresponding to the light transmitting region 326 (see also Fig. 55D),

the second pixel electrode 304, 305 is formed over the light reflecting region 327 of the insulation film 303, and

a holding capacitance electrode which is formed on the same layer as the gate line 328.

However, Figs. 53 and 54 of Kubo does not show the holding capacitance electrode being arranged at a portion corresponding to a side wall surface of the opening of the insulation film.

As shown in Fig. 4, Kubo discloses a holding capacitance electrode 8 formed in an overlapped manner to a boundary portion between the light transmitting region 20 and the light reflecting region 22 so as to obtain a desired reflectance and transmittance (col. 15, lines 25-27).

Thus, it would have been obvious that the holding capacitance electrode can be arranged at a boundary portion between the light transmitting region and the light reflecting region corresponding to a side wall surface of the opening of the insulation film to obtain a desired reflectance and transmittance (col. 15, lines 25-27).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

DUNG T. NGUYEN
PRIMARY EXAMINER

Thoi Duong

06/11/2005